



LICENSEAUDIT

COLLECTING ORACLE AUDIT DATA



DATABASE SCRIPT INSTRUCTION MANUAL

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FOR WHOM

This document is created for database administrators for the purpose of executing audit scripts to gather information about Oracle database instances status, it's editions, options and packs usage detection.

Depending on the script basic understanding of working with the following programs is highly recommended.

- Oracle Databases
- Linux and/or Windows shell

WHAT FOR / HOW IT WORKS

This audit script is designed to get current status of your Oracle Database instances, get information about potential usage of options and packs in your infrastructure.

The audit script is basically a set of SQL/PL commands. It makes only READ queries and **DOES NOT ALTER** your databases in any way.

The execution of the script results in one .csv file, which will be used for analysis and detailed report creation.

TECHNICAL REQUIREMENTS

The scripts are a collection of the PL/SQL statements to fetch required system information from the Oracle Database. The script can be run using any SQL*Plus installation locally available, or by using a remote connection to the target database.

Database Privileges and Execution Permission Requirements

Conditions	Privilege
All	CREATE SESSION system privilege.
All	SELECT ANY TABLE system privilege.
Oracle DB version > 9.1	SELECT ANY DICTIONARY system privilege.
Database Vault is in use or enabled	<ul style="list-style-type: none">- PARTICIPANT or OWNER authorization on 'Oracle Data Dictionary' realm.- PARTICIPANT or OWNER authorization on 'Oracle

	Database Vault' realm. - DV_SECANALYST role (for querying Oracle Database Vault-supplied views).
SQL*Plus execution permissions	SQL*Plus should be started with write permissions to folder to review script output data.

SYSTEM user must have all necessary privileges required for this task.

The script only includes SELECT statements: No data is being modified. All queries are limited to Oracle system tables: No data belonging to the client / application is selected.

WHERE TO RUN

The script should be run on each database instance except Automatic Storage Management (ASM) instances. Detailed information about different instance types can be found in the table below.

Instance type	How to run
Real Application Cluster	Connect and run script in each RAC instance.
Container Databases	Connect and run the script on CDB\$ROOT and on each corresponding open PDB (pluggable database).
OEM/Grid Control Repository	Run the script on each OEM/Grid Control Repository in your environment.
Target Database Controlled from OEM/Grid Control	Run script in each target databases managed from OEM / Cloud Control.
Stand by databases	Run script on each standby database, do not pay attention to the errors from the databases opened in MOUNTED mode.

HOW TO DO IT

There are two ways to collect script output:

- Manual execution (explained below)
- Using Java Collection Tool ([explained on page 8](#))

COLLECTING AUDIT DATA MANUALLY

This is the most straight forward way for getting information from your Oracle Databases infrastructure.

Connect to each database instance from command line using SQL*Plus, execute audit script and get .csv file with data.

Basic understanding of working with Oracle Databases is highly recommended.

MANUAL SCRIPT EXECUTION - STEP BY STEP

A full cycle of the manual execution is described in the following steps:

- a) Create a folder in desired location where script output results will be stored, for example C:\DB_Outputs (or /home/[user]/DB_Outputs if you work on Linux/mac OS) and navigate into this folder.

Example commands on linux/mac OS systems:

```
bash-3.2$ mkdir ~/DB_Outputs
```

```
bash-3.2$ cd ~/DB_Outputs/
```

- b) Place the database audit script in this directory. So you will have following structure: DB_Outputs/audit-script-<version>.sql
- c) While being in this directory, create a connection to the desired target database using SQL*Plus and execute command.

Example:

For remote connections you can use the following connection string:

```
sqlplus sys/user@host:port/db_name as sysdba @"audit-script-  
<version>.sql"
```

For local connections you can use following string:
sqlplus / as sysdba @"audit-script-<version>.sql"

Full command may look like this:

```
sqlplus sys/sys@192.168.100.112:1521/linuxdb as sysdba @"audit-script-  
v1.10.sql"
```

NOTE

Depending on your system and environment configuration you may need to give full path to the sqlplus tool.

TIP

To make your life easier, you can create a .bat or .sh file where you can list SQL*plus connections to all your databases and then run this file only. This is recommended for larger environments and frequent analysis.

- d) Once executed you will be prompted to accept license terms.

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Please read the agreement above and press (y) to proceed:█

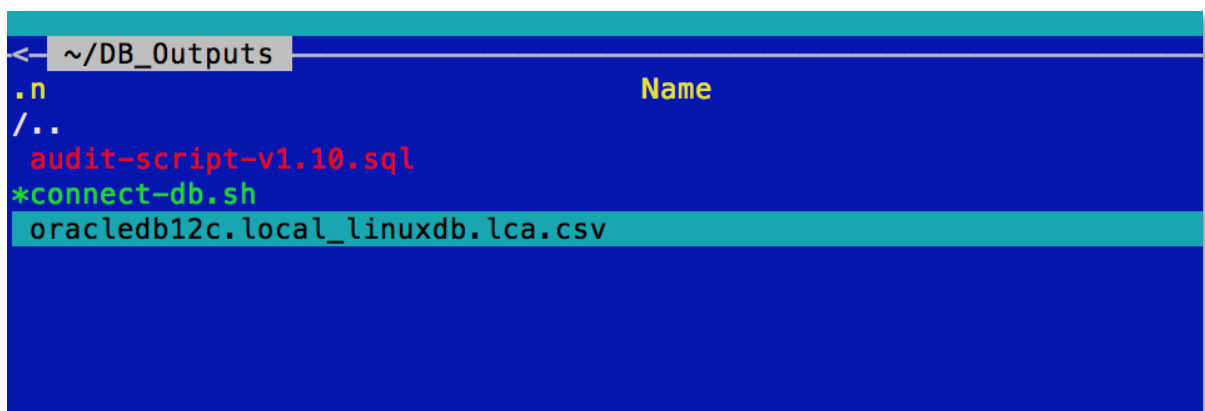
Press 'Y' to continue.

Database audit collection process will start and you will see a message about it:

```
Collecting information, please wait...  
Finished successfully  
Disconnected from Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production
```

If you see message '**Finished successfully**' it means that audit data collection process for this database instance went properly and you can continue to the next database instance.

- e) As a result of the script execution you should have *.csv file in your **DB_Output** directory (such as localhost.localdomain_orcl.lca.csv).



```
<- ~/DB_Outputs  
.n  
/..  
audit-script-v1.10.sql  
*connect-db.sh  
oracledb12c.local_linuxdb.lca.csv
```

- f) You can now zip the folder with the collected data and upload it to the licenseaudit.com dashboard or send it to your project manager

Example structure of the zip archive should be as following:

```
DB_Outputs.zip  
|--DB_Outputs  
|-[name].lca.csv  
|-----
```

Do not include zip files within the zip archive.

IMPORTANT

Please do not alter output files, if you want to mask your host names and instance names, you can use 'Outputs Encryption' feature of our Java Collection Tool.

COLLECT AUDIT DATA USING JAVA COLLECTION TOOL

In order to make the data collection process easier, we developed a collection tool, which will do the work for you.

If you do not have access to the Java Collection Tool please contact your project manager to get a copy.

WHAT IS THE JAVA COLLECTION TOOL

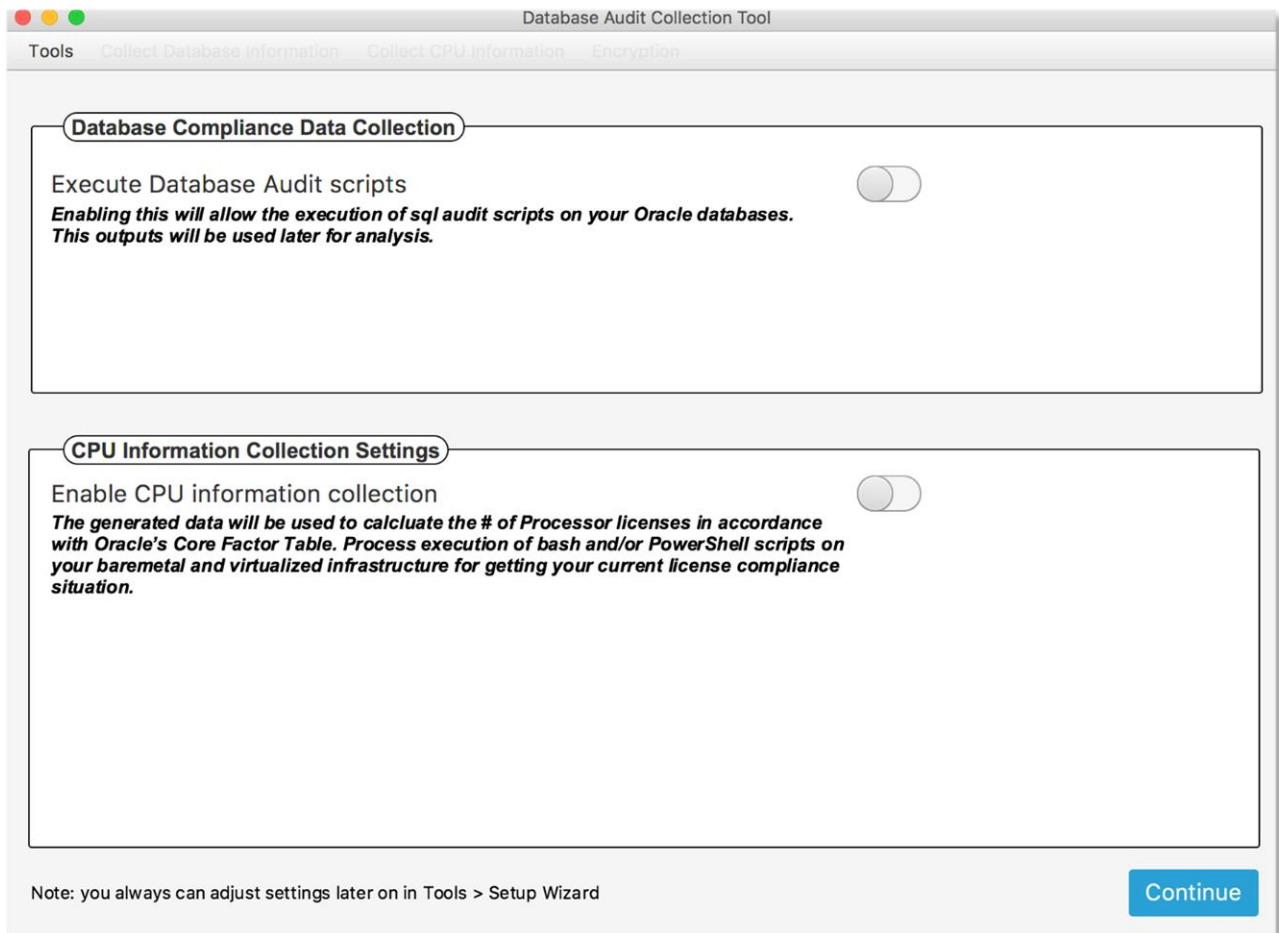
It's an executable file written in Java so it can be run on Windows/Linux/Mac OS. To use it, import the list of your database credentials (host/instance/user/password) and press a button. It will then start to collect data and place it in one folder.

NOTE

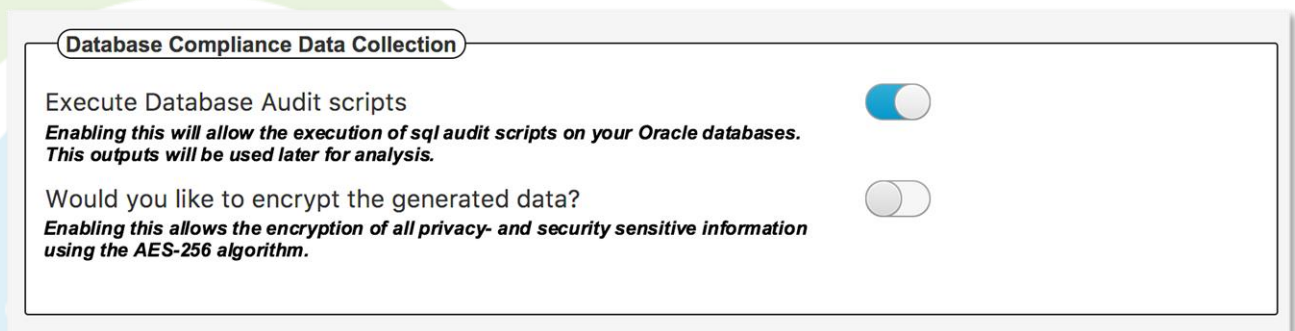
In order to use the tool you will have to prepare a .csv file with a list of your Oracle instances first. You can create the majority of this list by converting it from your tns.ora file.

JAVA COLLECTION TOOL - STEP BY STEP

1. When you start the tool it will look like this.



As we are in the 'Database Compliance Data collection process', please enable section 'Execute Database Audit scripts'



If you want to mask your outputs. Please enable 'Would you like to encrypt generated data' section also. If it's not necessary, just leave it disabled.

2) Press 'Continue' button at the bottom and finalize the initial configuration process on the settings screen:

Database Audit Collection Tool

Tools Collect Database Information Collect CPU Information Encryption

Oracle Database Connection Parameters

Only use the Connection Parameters if you have a default user across your organization. ⓘ

Default connection user ⓘ

Default connection password ⓘ

If you want to use default user in your connection, please leave username and password columns empty in .csv file.

SSH Connection Parameters

The access credentials for querying the CPU information must be provided in the .csv file.

SSH connection timeout, ms ⓘ

SSH key path

Data Collection Parameters

SQL*Plus location* ⓘ

Output directory ⓘ

SQL Scripts File ⓘ

Hardware script Linux/Unix ⓘ

If you want to check default audit files click here

Let's briefly walk through each section which is relevant to the Database Audit Data Collection process.

Oracle Database connection parameters

If you have one global user with system rights across all your database instances, you can enter the credentials here and it will be used for connections.

SSH Connection Parameters

If you do not have direct connection to the database instance from your location, or because of security reasons you can connect to the database instance only from the local machine where it is running on, you can use SSH connection first to the

host using authorization keys and then execute audit script on the server and get the outputs.

If you are not sure, just leave it empty.

Data collection parameters

This is the section for additional configuration of database audit collection process.

IMPORTANT

Please note that you are required to set the correct path to your SQL *Plus executable in order to make the tool work properly.

Output directory

All the collected audit data outputs will be placed in this folder. By default it places it into users' home directory.

SQL Scripts File

By default database audit sql/pl file will be used , but if you want to execute some custom scripts across all your databases you can set the path to the file .

Hardware script Linux/Unix

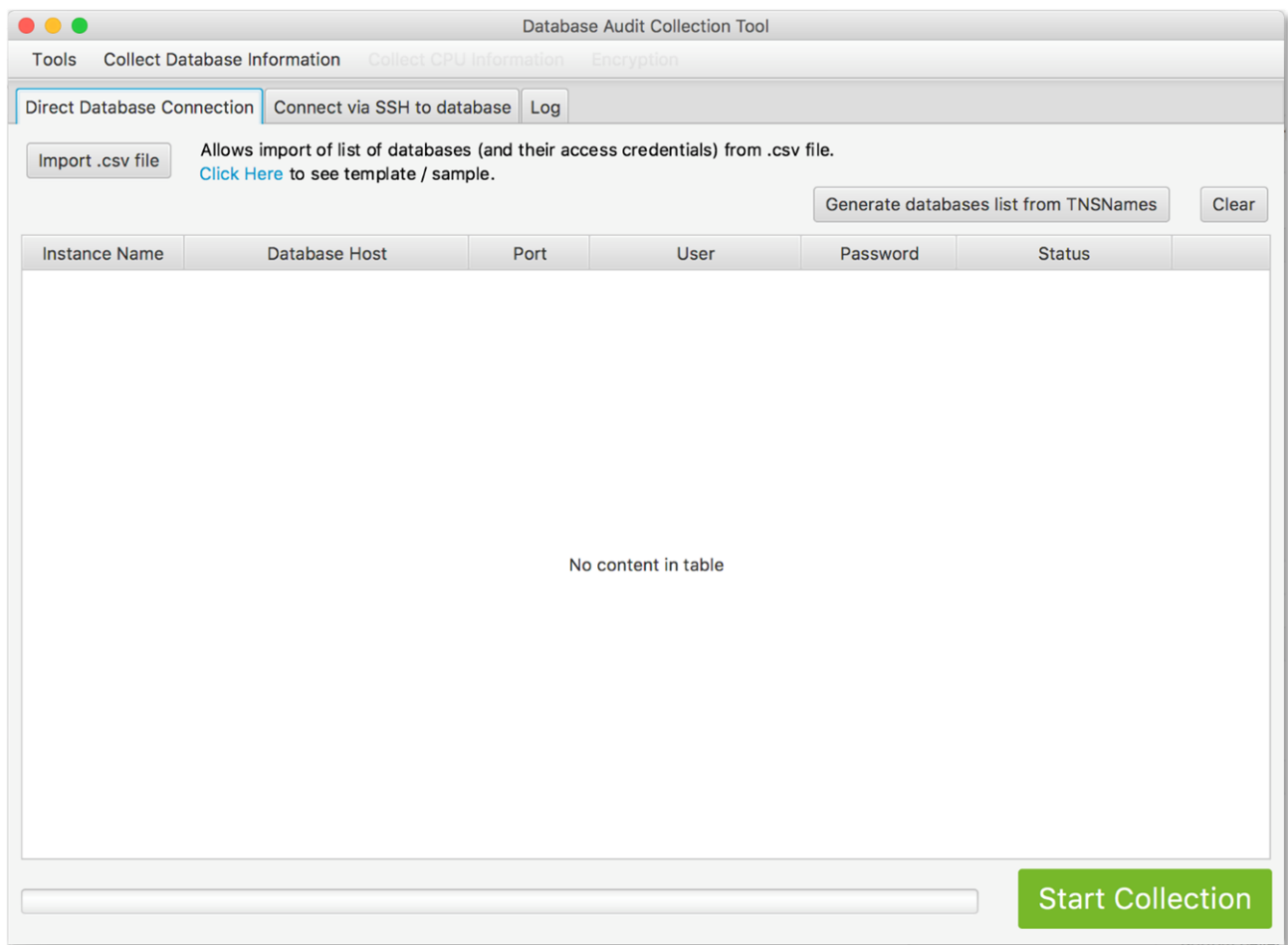
Not used in the database collection process.

Once you are finished with the settings click 'Save Settings' and go to the next step.

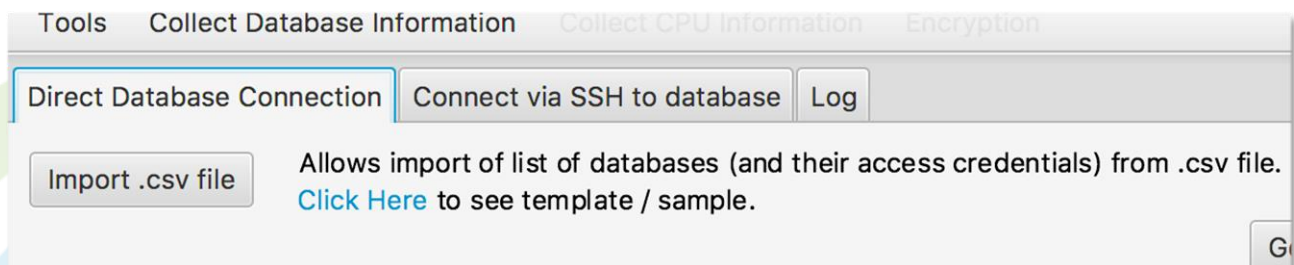
3) Click 'Collect Database Information' in the top menu.

The screenshot shows the 'Database Audit Collection Tool' window. The 'Tools' menu is open, and 'Collect Database Information' is selected. The main panel displays two sections: 'Oracle Database Connection Parameters' and 'SSH Connection'. The 'Oracle Database Connection Parameters' section includes a note: 'Only use the Connection Parameters if you have a default user across your organization.' followed by an information icon. Below this are two input fields: 'Default connection user' and 'Default connection password', each with an information icon to its right. The 'SSH Connection' section includes a note: 'The access credentials must be provided' followed by an information icon. Below this are two input fields: 'SSH connection timeout' and 'SSH key path', each with an information icon to its right. The 'SSH key path' field has a dropdown menu showing '/U'.

4) You will see main database audit collection screen.




5) In order to start database audit collection process you need to prepare a list of database hosts and access credentials.
The list of databases should be prepared in a .csv file and imported into the tool.
A pre-defined .csv template comes with the tool. Click on “Click Here” to download.



6) Once you open the template in Excel or Open Office it looks like this.

	A	B	C	D	E	F	G	H	
1	Database Instance Name	Database Host	Database Port	Username	Password	Database version			
2									
3									
4									
5									

The columns are pretty self-explanatory and once filled in, should look like this.

	A	B	C	D	E	F	G
1	Database Instance Name	Database Host	Database Port	Username	Password	Database version	
2	linuxdb	192.168.100.11	1521	sys	sys	12	
3							
4							
5							

7) After finishing the list of your databases, save the file and click on the 'Import .csv' file button. Choose the path to the file, and import the file. The data from your file, should appear in the java tool.

[illegible]

8) Click 'Start Collection' button to start the collection process.

10) The output files are stored in the folder which you have configured as 'Outputs directory' in step 2.



11) You can now zip the folder with the collected data and upload it to the licenseaudit.com dashboard or send it to your project manager.

WHAT TO DO WITH THE RESULTS

When you are finished collecting all the information please upload the zip file containing all the collected .csv files to the licenseaudit.com dashboard.